SYBASE®

e-Government Portals: A Sybase Vision

A Sybase White Paper. *Everything works better when everything works together.*™

secure

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1. e-Gov Comes of Age

Continuously improving public service is a critical government mission. People who bank and buy airline tickets online expect government to offer comparable conveniences.

The challenge is how to deliver higher-quality help faster, more efficiently, and at lower costs. To roll out more and better services for internal and external customers, public bodies at all levels are transforming themselves into e-Governments.

Proliferating e-Gov initiatives constantly broaden public and employee access to government via the Web. Serving constituents "online, not in line" is today's gold standard.

Homeland Security Creates New Imperative

In the wake of the 2001 terrorist attacks on New York City's World Trade Center, the US government's mission to protect the public has taken on particular importance. Title VII of the USA Patriot Act of 2001 calls for public agencies to share information to protect America's critical infrastructures. Financial, health care, transportation, telecommunications, and energy systems are targeted.

The act allocates $50 million in FY 2002 and $100 million in FY 2003 to facilitate information sharing to combat terrorism. These funds can provide a budgetary boost to speed e-Gov transitions.

e-Gov Initiatives Skyrocket

McKinsey and Company calls e-Government a "quiet explosion." Over the last 5 years, governments worldwide have launched more than 500 programs to deliver public services online.[1]

Many citizens no longer wait in line for hours at motor vehicle departments or post offices. Tasks that once took hours now take minutes, and everyone wins.
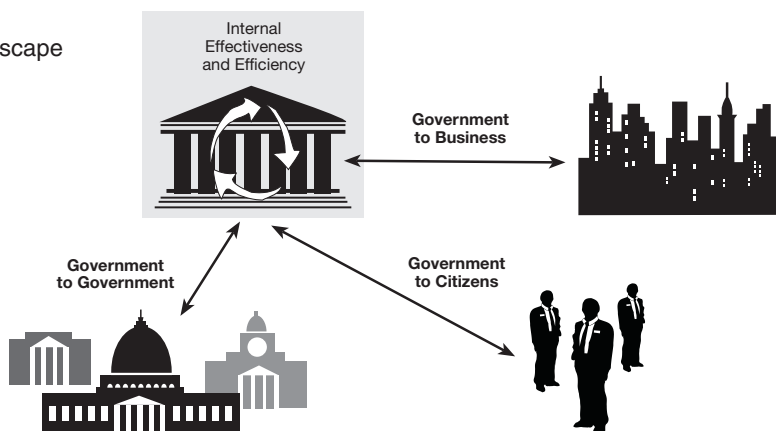
Consider that:
  • Every week, the governor of Minnesota gets 13,000 emails from the public.
  • 75% of Australians file income taxes online.
  • Brazilians vote electronically in all national and local elections.[2]

When governments go online, savings are realized instantly.
  • Arizona residents who renew car registrations online save their state $5 each,[3] creating an annual savings of more than $1.5 million for the Arizona Motor Vehicle Department.[4]
  • The US Internal Revenue Service saves $1.20 on each electronic tax return it processes.[5]
  • The US Department of Agriculture saves 78% or $60 per transaction with its e-procurement system.[6]

e-Government
Services Landscape

Internal
Effectiveness
and Efficiency

Government
to Business

Government
to Government

Government
to Citizens

Sybase GSA Portal Raises the Bar

Consolidating procurement and moving the process online produces an immediate and dramatic ROI. Since US governments spend $568 billion annually on goods and services,[7] the huge savings potential makes procurement an extremely attractive first e-Gov initiative.

For example, in 1995, the US General Services Administration pioneered GSA Advantage!— the largest procurement portal in the world—using Sybase technology. Then, in 2000, the agency upgraded the portal to handle rapidly increasing traffic—again relying on Sybase technology.

GSA Advantage! slashed procurement costs 80%—from $150 to $30 per transaction, <**saving the GSA almost $1 billion in 2001.**> 120,000 federal government employees worldwide visit **www.gsaadvantage.gov** to buy products from 4,000 suppliers. The online ordering system processes in excess of $100M annually.

Sybase Enterprise Portal (EP) provides a single sign-on and integration platform for all back-end systems. EP's ability to leverage existing infrastructure accelerated time-to-market from 4 years to 6 months.

"Without the Sybase Enterprise Portal, it would have been extremely difficult for GSA to have implemented a comparable architecture, especially considering some of the technology disparities and proprietary systems we had in place," says Al Iagnemmo, director of the GSA's E-Business Division. "With the Enterprise Portal and...new architecture, we...have the opportunity for true integration and future growth."

All Web Sites Are Not Portals

The first step many governments take to move online is to launch static Web pages without interactive capabilities. "Brochureware," as such sites are called, is then improved by adding interactive features and hyperlinking Web sites, which remain separate information silos.

To process transactions online, some governments turn to external hosted service providers. The providers set up online systems for functions such as registering vehicles, paying taxes, or reserving campgrounds in return for either a percentage of each transaction's value or a combination of fixed and variable fees.

Although service providers offer low initial costs, outsourcing transaction implementations cannot make substantive changes in the way information is collected and accessed. "Pay as you go" has high operating costs, may compromise security, and cannot provide a foundation to expand online services, integrate legacy applications, or build knowledge management capabilities.

By outsourcing Web site development in bits and pieces or focusing largely on transactions, governments miss the chance to harness portal power. To create a knowledge management system that electronically connects all records and agencies, governments need to implement an enterprise portal themselves.

e-Gov in Action

e-Government expands information access, raises employee morale, streamlines business and payment processes, improves accuracy, reduces the stockpiling of inaccessible paper records, and builds public satisfaction. At the same time, overhead expenses plummet.

Streamline Government Processes

To do more with less, governments are building Web sites that:

- Centralize procurement and slash order processing costs.
- Comply with disclosure laws and trim printing costs by putting public records, manuals, and brochures online.
- Improve reporting accuracy and reduce costs through data consolidation and electronic report distribution.
- Dispose of surplus property profitably through online public auctions.
- Manage grant and financial aid programs, including online applications and fund disbursement tracking.
- Sell government securities.
- Process income tax returns, collect income and property taxes, and distribute refunds.
- Let employees manage their own personnel records, health insurance, and retirement plans.
- Enable employees to record timesheets and file travel and expense reports.
- Implement wireless handheld applications to support public works projects and manage vehicle fleets.
- Create new revenue sources by selling Web site space to private companies to advertise complementary services. (For example, at the US Internal Revenue Service Web site, users can click through to buy commercial tax preparation software.)

Enhance Secure Public Self-Service

The public already uses government Web sites to:

- Download forms, make electronic filings, and track income tax payments and claims for unemployment, workers' compensation, and disability insurance.
- Obtain licenses for recreational activities like fishing or marriages.
- Pay parking tickets.
- Register cars and make appointments for driver's license exams.
- Apply for health and human welfare benefits and track cases.
- Locate public facilities, plan public transportation routes, and determine trip costs.
- Get updates on the latest road conditions.
- Reserve recreational facilities like campgrounds or tennis courts.
- Pay income and property taxes and search real estate title records.
- Check professional licenses for status and complaint history and file complaints.
- Assess earthquake, flood, and other natural threats to specific properties via dynamic online maps.
- File complaints with regulatory agencies ike the FDIC and the SEC.

Promote Economic Growth

Businesses use government Web sites to:

- Obtain business licenses and construction permits.
- Discover contracting opportunities and submit proposals to provide government services.
- Research property records and zoning restrictions.
- Sell their services.
- Search court documents.

2. Enterprise Portal Opens One Electronic Doorway

Sybase Enterprise Portal provides one electronic doorway to all a government's departments, services, records, and personnel.

Brings Big Benefits

Sybase EP lets governments extend knowledge management and business processes in previously unimaginable ways. The portal :

- **Leverages existing investments** by securely integrating legacy systems, applications, and information from previously incompatible silos to develop comprehensive knowledge management systems.
- **Automates application integration** using Sybase's pre-built integration technology.
- **Extends knowledge management** by enabling different groups to organize and share information from incompatible applications while securely applying role-based access controls.
- **Reduces costs and errors** associated with manual processes for tagging and indexing with integrated search, categorization, and auto-indexing tools.
- **Simplifies information access** through a single sign-on to network applications.
- **Lowers training and support costs** with a personalized, common look-and-feel user interface and pre-built templates users can customize. One intuitive graphical browser lets employees with minimal computer skills post and revise information.
- **Raises revenues** by slashing transaction processing and overhead costs, increasing efficiency, making it easier to do business with government, and creating new opportunities for commercial private sector partnerships.
- **Provides the highest levels of security** with a framework that enables departments and agencies to collaborate and share data seamlessly and safely.
- O**ffers anytime, anywhere communications** via wired and wireless connections to PCs, PDAs, and cell phones.
- **Scales to accommodate growing numbers of users** to meet even the heaviest traffic loads.
- **Enhances public service and builds constituent support** by making government services and records instantly available via the Web.
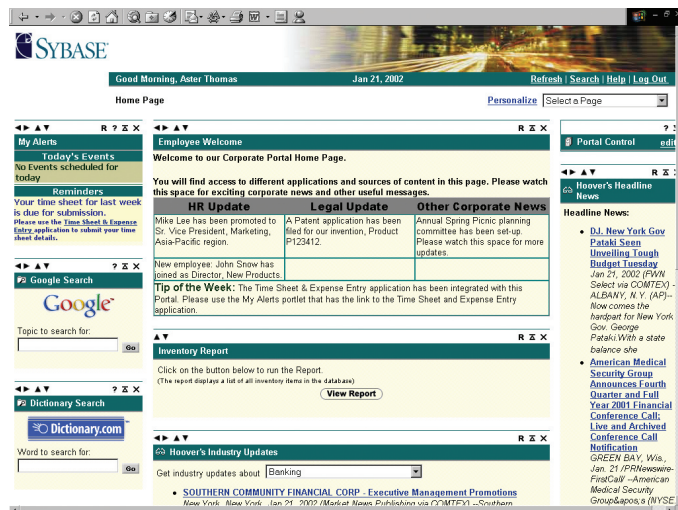
What's a Portal?

Enterprise portals can be built on Intranet, Extranet, or Internet Web sites. While all portals are Web sites, not all Web sites are portals.

Some people think of an enterprise portal as just a Web site. But the Web site is only a thin veneer through which people interact with Sybase EP. Back end integration is what makes the portal work.

Whether internally or externally facing, the basic building blocks of a Sybase portal are portal services, a portal foundation, and integration tools.

Portal Services

A personalized presentation layer gives legacy systems one look and feel. Smart windows or "portlets"— with built-in navigation and content feeds—create a framework to view legacy data.
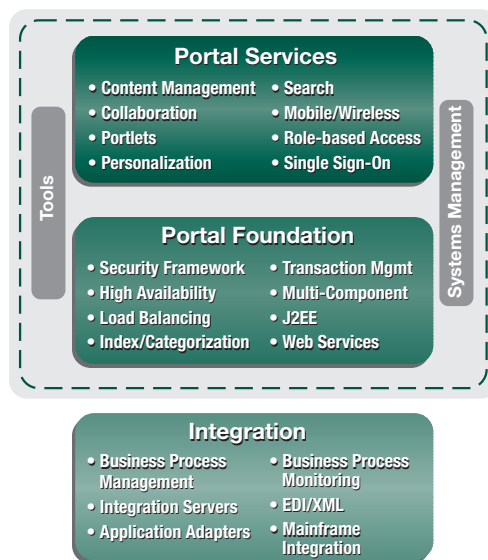
Users point-and-click on one interface to work in all network applications. Search, categorization, and automatic indexing tools gather, organize, refine, and disseminate data seamlessly to manage knowledge.

Portal Foundation

An advanced back-end foundation ensures secure, continuous 24/7 availability. Users get access to all designated enterprise applications and information with a single sign-on.

An arsenal of protections creates layers of access controls. Integral and flexible security features meet "top secret" standards. Sybase Enterprise Portal is the only COTS portal product available that meets the stringent security accreditation requirements mandated in the Director of Central Intelligence (DCID) 6-3.

The foundation lays a firm infrastructure to keep the portal working. Reliability, scalability, fault tolerance, and load balancing are all part of the solution.

Portal Services

Tools

- Content Management
- Collaboration
- Portlets
- Personalization
- Search
- Mobile/Wireless
- Role-based Access
- Single Sign-On

Portal Foundation

- Security Framework
- High Availability
- Load Balancing
- Index/Categorization
- Transaction Mgmt
- Multi-Component
- J2EE
- Web Services

Systems Management

Integration

- Business Process Management
- Integration Servers
- Application Adapters
- Business Process Monitoring
- EDI/XML
- Mainframe Integration

Integration Tools

Sybase believes that a customer's choice of portal technology should be decoupled from that customer's selection of back-end databases. Sybase EP provides the infrastructure to migrate legacy applications to the Web and connect applications to exchange information seamlessly. Back-end integration melds disparate systems into an extended enterprise so that employees and the public can transact business without knowing how government is organized.

Integration tools accelerate time to market. EP eliminates the need for extensive hand coding and provides reliable connections between mainframe and legacy systems. Adapters and integration servers jump start integration by ensuring   effective data transfer.

The Sybase portal's open architecture and standards-based environment are critical to its success in linking disparate technologies. Sybase EP works well with most embedded systems, databases, applications, and standards.

Formula for Success

What makes an e-Government portal succeed? Success factors, many of which emerged at a recent "Knowledge Management — the Foundation for Electronic Government" conference in Washington, DC, as reported by Belkis Leong-Hong,[13] include:

- Get the support and commitment of executives.
- Communicate, communicate, communicate.
- Educate business and IT executives.
- Understand the organizational environment.
- Focus on knowledge, process, and organization concurrently.
- Plan how to deal with cultural barriers.
- Build a little, test a little, use a lot.
- Deploy in manageable chunks.
- Don't forget training and support.
- Remember that IT is an enabler.
- Have measurable outcomes.

3. Knowledge Management and Secure Self-Service Solutions

Sybase portal technology realizes the "connect and collect" knowledge management dream. Governments can use a Sybase portal to create a secure knowledge management framework and move business processes online for secure self-service—without redesigning or discarding existing IT investments.

Builds Knowledge Management Framework

Knowledge management involves gathering, organizing, refining, and disseminating information. The Sybase portal gives organizations a full storehouse of knowledge management tools so that the right information gets to the right person at the right time, given that person has the security credentials necessary to entitle him/herself to that information.

Smart portlets are the agents that transform department-centered applications and data into user-centered information sources. EP's search, categorization, and auto-indexing tools enable each portlet to bring up bits of information from different applications and systems to perform required business functions.

Portlets collect facts and figures from throughout the enterprise. Since there is one common interface, users can gather data from any source without learning how a particular system works. The smart portlets control who can access various data sources and their level of authority.

Offers Secure Self-Service

Broadening information access raises system security demands. As governments open information sources initially developed for small groups of employees to other public bodies or the general public, new controls are needed to regulate information flow.

Sybase EP's stringent access controls make it feasible to erect one gateway to legacy applications and data, while tightly restricting and monitoring admittance. Single sign-on and layers of access controls let governments push more and more content to Web sites while protecting sensitive data.

Single sign-on also boosts productivity. Today government employees may need as many as eight different passwords to perform daily tasks. A forgotten password brings business to a halt. For example, one employee says, "Often, when I'm trying to do something like approve timecards, I get locked out of the system because I forgot my password."

Security in a portal is like plumbing in a home. Just as you need pipes in place to add a bathroom, security is most effective when designed as part of a portal's structure.

The Sybase portal's security framework enables capabilities not otherwise possible. For example, without user authentication and encrypted network connections, a portal can't support financial transactions.

Stringent Personalized Access Controls

The ability to reach a broader audience has risks as well as benefits. To ensure the safe conduct of e-Government, new strategies are required. Exposing private or privileged information, or high-value financial transactions, to accidental or deliberate intrusion could have a devastating impact.

Role-based access controls are one of the Sybase portal's toughest security features. Personalization tools let portal administrators determine which content and functions to offer each user.

Governments dramatically enhance security, productivity, and morale by personalizing information for employees and the public. Sybase EP enables three levels of personalization: role, individual, and context. While certain roles need access to a broad set of content and tools, individuals require only a subset of the whole.

Security considerations and need-to-know guide a government's initial personalization decisions. Then users can further personalize presentation based on changing roles and contexts.

Comprehensive Security Arsenal

A Sybase portal offers governments all the safeguards needed to create an integrated information environment that lets officials sleep soundly at night. Sybase EP:

- Includes an 128-bit encrypted Secure Socket Layer (SSL) that meets the most stringent security standards.
- Encrypts all communications between a user's browser and the portal, regardless of physical location, and can store data in encrypted form. (Governments can tailor encryption to reflect specific needs and information sensitivity.)
- Provides multiple protections for sensitive data, including support for layers of authentication. For example, a Secure Business Object (SBO) can request additional passwords before granting access to legacy systems.

- Includes flexible, fine-grained auditing capabilities which allow all user attempts to access portal assets to be audited to a database for reporting and/or alerting purposes.
- Creates levels of accountability to match transaction importance. Protection ranges from auditing to requiring digital signatures.
- Enforces workflow security checks and balances. Rules can ensure that if one person requests a check, a different person must approve the disbursement.
- Thwarts hackers by providing configurable lockout rules. For example, after three failed login attempts, a user's account could be locked for 30 minutes. After three more failed logins, the account could be locked for 1 hour.
- Has a built-in audit system to detect and record attempts to bypass security.
- Offers protections comparable to public key infrastructures (PKI), with significant cost, deployment, and administrative advantages.
- Integrates easily with other security frameworks such as Lightweight Directory Access Protocol (LDAP), Verisign, and Entrust.

Sybase Portal Power

Sybase e-Government enterprise portals offer:

- Continuous 24/7 availability.
- Knowledge management based on full data, application, and event integration with integrity, reliability, and redundancy. (Data integration extends to more than 25 IT systems.)
- End-to-end secure self-service.
- Flexibility to rapidly reconfigure browsers, enterprise application integration technologies, and enterprise applications.
- Support for G2C (government-to-citizen), G2E (government to employee), G2G (government-to-government), G2B (government-to-business), and system-to-system collaboration and integration with e-marketplaces.
- An open and extensible architecture that supports best-of-breed applications.
- Links to mobile and wireless devices and remote users.
- Lightweight Directory Access Protocol (LDAP) support to manage user authentication, authorization, roles, and profiles.
- A Java™ 2 Platform, Enterprise Edition (J2EE™)-compliant portal server for hosting applications.
- Support for application logic written in Sybase, SQL Windows (CORBA), Visual Basic (Microsoft®), C++, and Java.
- Open standards, such as XML, that integrate smoothly with other standards and content technologies in use.

Independent Information Repositories Protect Data

Legal requirements mandate strict separation of categories of information. For example, criminal records and income tax filings can never be open to the public. And even among government employees, there are levels of classified information, each of which has different security requirements.

Today, physically unconnected computing systems and elaborate policies and procedures often enforce required separations. The resulting inefficiency increases costs and reduces data access.

Sybase's Enterprise Portal supports strict information separation through an organizational tree structure and flexible access controls that offer more built-in protections than separate systems. The portal can enforce practically an unlimited number of independent information repositories at no additional cost, without creating inaccessible islands of information.

4. Sybase Portal Leads Market

Sybase pioneered portal technology for the public and private sectors. Top technology research firms such as Gartner, Inc. have rated Sybase a leader in the portal market.

Public Sector Know-How

Sybase's portal, and the supporting enterprise application integration technologies, have a long record of success with federal, state, and local governments. Sybase understands the unique requirements of the public sector, where the bottom line is more subjective and complex than in private enterprise.

In addition to building the world's largest procurement portal for the GSA, Sybase also has provided Web-enabled solutions to the:

 • Department of Defense
 • New York State Department of Health
 • Oklahoma Department of Health
 • Colorado Department of Justice
 • New Jersey Department of Health
 • Texas Department of Human Services/Workforce Commission.

Sybase A Long Haul Partner

Sybase is a technology partner governments can count on to be around for the long haul. Founded in 1984, Sybase is one of the largest software companies in the world. Today the company is best known for creating enterprise IT infrastructures that bridge heterogeneous technologies.

In fiscal year 2000—the most profitable in the company's 16-year history—Sybase revenues reached $960.5 million. Sybase stock trades on the New York Stock Exchange. The company has some 5,000 employees worldwide and a host of proprietary and patented technologies that are market leaders.

An Incremental e-Gov Transition

A Sybase portal lets governments incrementally Web-enable enterprise applications. Gartner says that "iterative development and deployment is the most important best practice for launching portals." Gartner's prescription for success is:

 • Develop a first release of your portal quickly.
 • Pilot the portal to a limited audience.
 • Implement lessons learned to add features.
 • Then, deploy the portal in stages to larger and more diverse audiences.[10]

That's just what Sybase's Enterprise Portal technology lets you to do. Sybase gives governments proven software, consulting services, and technical support to roll out a pilot portal now. For a surprisingly small investment, you can:

 • Get an e-Government portal up and running in days.
 • See firsthand how a portal works in your environment for a limited group of users.
 • Assess stakeholders' needs to plan a bigger portal rollout that fits your requirements.

To smooth the transition to e-Government, Sybase Professional Services has dedicated portal development specialists with strong public sector experience. Their expertise is migrating existing government technology to the Web with the greatest speed and lowest cost.

Starting the Portal Process

How do most successful e-Government implementations begin? Launching a portal is a process—you take one step at a time. One approach that gets excellent results, as so aptly said by Douglas Holmes in e.gov, is "think big, start small, and scale fast." [11]

Generally, successful portal initiatives are managed top-down. Groups charged with realizing e-Gov plans need the authority to make decisions. As Holmes says:

> *Since both the paybacks and risks of IT failure are now higher than ever, leadership from the top is crucial to improve coordination between departments, change working cultures, and drive e-government forward.* [12]

The first step is defining a clear portal vision that has the support of key stakeholders. To that end, forming a cross-departmental coordinating committee to oversee the initiative generally helps.

Recruit visionaries as well as technical people, senior managers and those in the trenches. The committee can serve as a springboard to reinvent processes by promoting the broad communications and consensus building that are critical to a smooth portal launch.

The portal process is one of continual expansion and refinement to meet changing needs. The outcome is a knowledge management and secure self-service solution with benefits that dwarf system costs. "Everything works better when everything works together," and, for governments today, a Sybase Enterprise Portal makes that happen.

Footnotes

[1] "Putting citizens on-line, not in line," *The McKinsey Quarterly*, 2001, Number 2, On-Line Tactics, p. 65.

[2] Douglas Holmes, *e.gov: ebusiness Strategies for Government* (Nicholas Brealey Publishing: London, 2001), "Introduction."

[3] "The next revolution," *Economist*, June 24-30, 2000.

[4] "Creating and implementing an e-Government portal solution," IBM Global Industries, 2000.

[5] Op. cit., "Putting citizens on-line," p. 66.

[6] Op. cit., e.gov, "Introduction."

[7] Op. cit., "Putting citizens on-line," p. 67.

[8] **Demir Barlas, Line56,** The GSA's Portal Window, Friday, February 01, 2002.

[9] **Demir Barlas, Line56,** The GSA's Portal Window, Friday, February 01, 2002.

[10] Gene Phifer, "Enterprise Portals: Growing Up Quickly," Gartner Symposium, Itxpo Presentation, May 2001.

[11] Op. cit., *e.gov*, page 10.

[12] Op. cit., *e.gov*, page 81.

[13] Belkis Leong-Hong, "Critical Success Factors in Implementing Knowledge Management," *Building Knowledge Management Environments for Electronic Government*, (Management Concepts, Vienna, Virginia: 2001) pp. 89-90.

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